

## **REMARKS**

In the Office Action dated September 20, 2004, claims 22-28 stand rejected.

Applicants thank the Examiner for setting aside time for the interview with Applicants' representatives on February 24, 2005, during which the claim rejections and Applicants' proposed amendments and reasons for patentability were discussed. Accordingly, Applicants have herein amended claims 22 and 23. New claim 29 is added. No new matter is introduced as a result of these amendments, support for which is found within the specification as filed. Applicants respectfully submit that the Examiner's rejections of claims 22 – 28 as set forth in the Office Action have been overcome and that claims 22 – 29 are allowable over the cited art for the reasons set forth below.

To the extent it is not already entered, Applicants request entry of an amendment to the specification to include a specific reference to the international application from which priority is claimed.

Applicants submit the instant amendment and response concurrently with a Request for Continued Examination (RCE) and an affidavit by Professor Yongmin Kim under 37 CFR 1.132 (hereinafter "*Kim Affidavit*"). Consideration by the Examiner is respectfully requested.

### **A. Priority Claim**

In the instant Office Action, the Examiner indicated that Applicants failed to amend the specification to include the priority claim for International Application No. PCT/SG00/00029. Applicants respectfully disagree. Upon filing the instant application on March 9, 2001, Applicants indicated on its Request for Filing a Continuation or Division of an International Application to amend the specification to include the priority claim. A copy of this form is attached hereto for your reference. *See Attachment A.* As the Examiner will see, the form includes the following request: "Amend the specification by inserting before the first line the sentence: 'This application is a continuation of international application number

PCT/SG00/00029, filed February 21, 2000, pending.” Thus, Applicants submit that the specification already includes the priority claim.

As Applicants noted in their prior response to the Office Action dated November 19, 2003, priority for the present application is claimed under 35 U.S.C. §§120 and 365(c). Applicants note also that in connection with the Request to Correct Inventorship filed concurrently with Applicants’ response to the November 19, 2003 Office Action, a new declaration under 37 CFR 1.63 has been submitted. The new declaration includes the proper priority claim under 35 U.S.C. §§120 and 365(c). Accordingly, Applicants respectfully submit that all requirements for claiming priority have been met and request the Examiner to indicate for the record that the priority claim under 35 U.S.C. §§ 120 and 365(c) is perfected.

**B. Written Description**

Claim 22 recites, in pertinent part:

22. A unitary portable data storage device which can be directly plugged into a universal serial bus (USB) socket of a computer and which is operative to function as an alternative to a magnetic disk or CD, and which is capable of storing software for installation to the computer or of receiving and storing user’s data present in the computer, the unitary portable data storage device comprising:

*a USB plug integrated into the unitary portable data storage device without an intervening cable capable of coupling the unitary portable data storage device directly to a USB socket on a computer;*

\* \* \*

*a non-volatile solid-state memory, said memory being non-removable from the unitary portable data storage device and having sufficient capacity to enable the unitary portable data storage device to serve as an alternative to a magnetic disk or CD; and*

*a memory controller, the memory controller being coupled between the interface and the memory to control the flow of data between the memory and the USB plug in a manner to enable the unitary portable data storage device to serve as an alternative to a magnetic disk or CD.*

(Emphasis provided).

The Examiner states that the specification “does not disclose that the USB plug 1 of the device is capable of coupling **directly without an intervening cable.**” The Examiner also

states that the limitations “a USB plug integrated into the **unitary** portable data storage device” and “said memory being **non-removable** from the unitary portable data storage device” are not supported by the original specification. Applicants discuss these issues separately below.

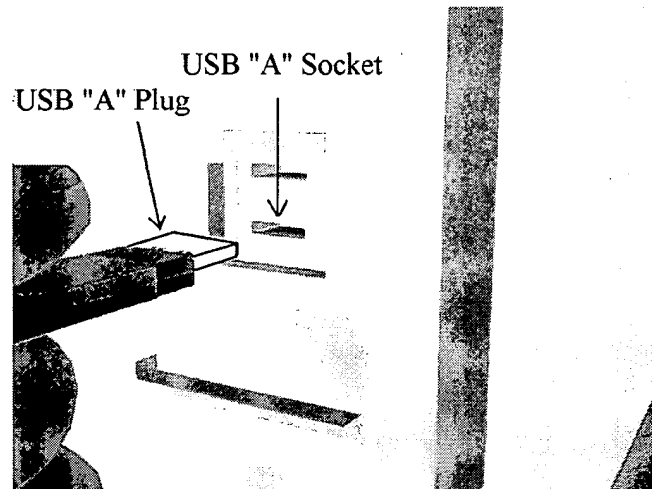
#### **“DIRECTLY WITHOUT AN INTERVENING CABLE”**

Applicants and the Examiner agree that the specification discloses the integrated plug of the USB device is plugged into a USB socket of a host computer. The Examiner states in his September 20, 2004 Office Action: “However, **while the specification discloses a USB plug and that the plug 1 of the device 10 is plugged into 20 to a USB socket on a computer**, it does not disclose that the USB plug 1 of the device is capable of coupling directly without an intervening cable.” (Emphasis provided.)

The appropriate legal standard to determine whether a claimed invention complies with 35 U.S.C. § 112, first paragraph, is whether the specification in its entirety conveys, with reasonable clarity to those skilled in the art, that the inventors possessed the claimed invention at the time of filing. *See Vas-Cath v. Mahurkar*, 935 F. 2d 1555, 1563-64 (Fed. Cir. 1991), *Fujikawa v. Wattanasin*, 93 F.3d. 1559, 1570 (Fed. Cir. 1996). In applying the proper legal test to the present application, the specification conveys to those skilled in the art, to whom it is addressed, a unitary portable storage device that has an integrated USB plug which can be **directly plugged into a USB socket** of a computer without an intervening cable.

The Examiner indicated that in his opinion the specification does not disclose the physical characteristics of the plug and the socket, and that directly coupling requires the plug and socket to be compatible both electrically and physically. Applicants strongly believe that the specification discloses the physical characteristics and electrical and physical compatibility of the plug and socket to the skilled artisan.

There is no dispute that the original specification clearly discloses that the claimed device includes a USB plug 1. There is also no dispute the specification discloses that the host computer has a USB socket which the USB plug 1 of the device plugs into. *See, e.g., September 2004 Office Action at ¶5; Kim Affidavit at ¶13.*



It was well known in the art that host computers include a USB “A”-type socket as illustrated above. The USB Specification defines this. *See Kim Affidavit at ¶ 16.* Consistent therewith and the teaching of the specification, a skilled artisan would know that USB plug 1 of the device would only be the type that is electrically and physically compatible with the host computer’s USB “A”-type socket. This is called a USB “A”-type plug. The physical and electrical characteristics of the USB “A” plug and the USB “A” socket are defined in the USB Specification. When there is a USB “A” plug and a USB “A” socket, a skilled artisan would understand a connection between the two is established by directly coupling the USB “A” plug to the USB “A” socket. *See Kim Affidavit at ¶¶ 17 – 18.*

Moreover, as illustrated in Figure 1, the specification teaches using the D12 part in combination with the USB plug 1 in the device 10. As would be understood by those skilled in the art at the time of the invention, D12 is a Philips part designed to be used on a printed circuit board in close proximity to a USB socket, as opposed to being connected to the socket via an intervening cable. The specification teaches using D12 as the USB interface controller

2 in combination with a USB “A” plug 1. A skilled artisan would understand the interface controller D12 is to be used in close proximity to the USB plug 1 without an intervening cable. This further supports Applicants’ position that the patent application as filed discloses an integrated USB plug. Accordingly, a skilled artisan would understand that USB plug 1 of the disclosed device would directly connect to a USB socket of a host computer without any intervening cable. *See Kim Affidavit* at ¶¶ 19 – 20.

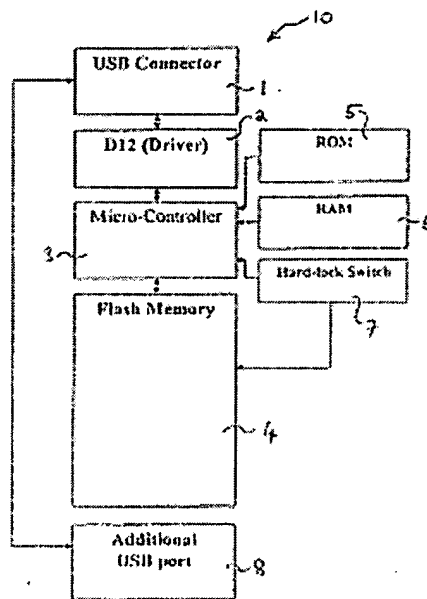
Thus, the Applicants have conveyed to those skilled in the art that Applicants were in possession of unitary portable data storage device having an integrated USB plug that is capable of **directly** plugging into the USB socket of a computer without an intervening cable. Since the original patent specification unambiguously discloses that the integrated USB plug of the storage device plugs directly into a USB socket on a computer, claims 22 – 29 are fully supported by the specification as required under 35 U.S.C. § 112, first paragraph.

#### **“UNITARY” AND “MEMORY BEING NON-REMOVABLE” LIMITATIONS**

The Examiner stated that the limitation “a USB plug integrated into the **unitary** portable data storage device” is not supported by the original specification. The Examiner also stated the specification does not support the limitation “said memory being **non-removable** from the unitary portable data storage device.” Applicants respectfully disagree.

The original specification unambiguously discloses to a skilled artisan that the invention described in the application is a unitary device with an integrated USB plug and memory. Throughout the patent specification, the device is referred to as “a portable data storage device” or “the portable storage device” in the singular form (*see, e.g.*, page 1, lines 3 – 4, lines 24 – 25; page 2, lines 8 – 9; page 3, lines 12, 15 – 20 and 22; and page 4, line 21), thereby conveying to the skilled artisan that the portable storage device is a single unitary structure. *See Kim Affidavit* at ¶¶ 22 – 24. The term “a” used throughout the patent

specification in reference to the device 10 suggests that the elements shown in Figure 1, reproduced below, are all part of the single device. *See North Am. Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 1575-76 (Fed. Cir. 1993) (where there is no indication in the patent specification that the inventors intended the term “a” to have other than its normal singular meaning it was proper to limit the claims to a singular device). *See also Abtox, Inc. v. Exitron Corp.*, 122 F.3d 1019, 1023-24 (Fed. Cir. 1997) (*opinion amended on other grounds*) (use of the article “a” in connection with the element “metallic gas-confining chamber” suggests a single chamber, and repeated references to “said chamber” as various portions of the device are described in the claim reinforces the singular nature of the chamber).



The original specification describes Figure 1 as follows: “Figure 1 shows a data storage device 10 which includes a USB plug 1 which is coupled to a USB interface device 2. The USB interface device 2 is coupled to a micro-controller 3 which is coupled to a flash memory 4.” Page 3, lines 22-24. In view of the discussion in the specification that magnetic disks and CD-ROMs are bulky and not truly portable because they require a separate drive mechanism, and that the present invention is a portable mass storage device designed to

eliminate such shortcomings of magnetic disks and CD-ROMs, a skilled artisan would not read Figure 1 as disclosing a removable memory or a USB plug connected to the device by a cable. Rather, having read the entirety of the specification, a skilled artisan would understand that Figure 1 shows a portable mass storage device 10 of unitary construction with no removable part, including a fixed, non-removable non-volatile solid-state memory – as opposed to having a combination of a removable memory device and a drive mechanism as in the case of magnetic disks or CD-ROMs. That the elements of device 10, namely: USB plug 1, USB interface device 2, micro-controller 3 and flash memory 4 are coupled one after the other suggests that flash memory 4 is a flash memory chip fixedly installed (e.g., soldered to the circuit board) within the device 10 together with micro-controller 3 and USB interface device 2. *See Kim Affidavit* at ¶¶ 25 – 27.

Moreover, a skilled artisan would understand that unlike certain types of memory chips that are intended to be removable from the device in which the chip is installed, flash memory chips are fixedly installed within a device and are non-removable under normal use of the device. *See Kim Affidavit* at ¶ 28. This further supports Applicants’ position that the specification teaches a unitary portable mass storage device with a non-removable flash memory.

To further support Applicants’ view that the specification teaches the unitary mass storage device with an integrate USB plug, Applicants note the disclosure in the specification “[i]f the installation of the software is complete, ... *the device 10 may then be removed [] from the USB socket on the computer*” (italics supplied). *See* page 7, lines 19-22. Applicants respectfully point out that these passages describe the device, rather than the plug, as being removed from the socket. If the specification had intended to teach a device that requires a cable to connect to the USB socket, it would not have spoken of plugging or removing the device itself into or from the socket. Instead, it would have said “the plug 1 of the device 10

may then be removed.” That Figure 1 teaches the use of Philips’ D12 part as the interface controller, as discussed above, further supports Applicants’ position that the unitary portable storage device disclosed in the original specification has an integrated USB plug, allowing the device to be plugged directly into the USB socket on a computer without an intervening cable. *See Kim Affidavit* at ¶¶ 29 – 30.

Accordingly, a skilled artisan, reading the entirety of the specification, would understand that data storage device 10 shown in Figure 1, which includes a USB plug 1 that is coupled to a USB interface device 2 that is coupled to a micro-controller 3 that is coupled to a flash memory 4, clearly disclose a unitary device with an integrated plug and a non-removable memory. *See Kim Affidavit* at ¶ 31.

Thus, the Applicants have clearly conveyed to those skilled in the art that Applicants were in possession of **unitary** portable data storage device having a USB plug integrated into the unitary portable data storage device without an intervening cable that includes a **non-removable** memory. As such, claims 22 – 29 complies with the requirement under 35 U.S.C. § 112, first paragraph.

### C. Prior Art

#### 1. U.S. Patent No. 6,038,320 (hereinafter “*Miller*”)

In responding to Applicants’ arguments filed on May 20, 2004, the Examiner stated that “regardless of what the devices are used for, Miller’s device anticipates Applicant’s invention since it teaches every single limitation that is claimed.” Applicants respectfully traverse.

As amended, the pending claims recite a unitary portable data storage device having, among other elements, “[a] *memory being non-removable from the unitary portable data storage device and having sufficient capacity to enable the unitary portable data storage*



*device to serve as an alternative to a magnetic disk or CD*” as well as “[a] *memory controller being coupled between the interface and the memory to control the flow of data between the memory and the USB plug in a manner to enable the unitary portable data storage device to operate as an alternative to a magnetic disk or CD.*” Here in the pending claims, the recited limitations the memory “*having sufficient capacity to enable the unitary portable data storage device to serve as an alternative to a magnetic disk or CD*” and the memory controller is “*to control the flow of data between the memory and the USB plug in a manner to enable the unitary portable data storage device to operate as an alternative to a magnetic disk or CD*” are structural limitations because they describe physical characteristics of the claimed device: the capability to manage the flow of large amounts of data and sufficient memory capacity to serve as a mass storage device such as a magnetic disk or CD.<sup>1</sup> These structural limitations are not anticipated by *Miller*, which does not have the capability or capacity to serve as a mass storage device. *Miller* is designed to limit access to a computer and store only a unique key code and an encrypted password, both of which are of limited size (e.g., *Miller* suggests that the password can be six bytes, *see* col. 3, ll. 42-43). To one skilled in the art, the *Miller* does not have capability or capacity to serve as a mass storage device. *See Kim Affidavit* at ¶¶ 32 – 33.

For at least the foregoing reasons, *Miller* does not anticipate claims 22 – 24 and 26 – 28 of the present application. Thus, Applicants respectfully submit that new claims 22 – 29 are patentable over *Miller*.

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<sup>1</sup> Applicants respectfully note that functional terms serve as structural limitations when they are used as adjectives to define the physical characteristics of the device. *See United States Filter Corp. v. Glegg Water Conditioning, Inc.*, 2005 WL 80947, \*1 (D. Mass); *In re Garnero*, 412 F.2d 276 (CCPA 1969). *See also Vanguard Products Corp. v. Parker Hannifan Corp.*, 234 F.3d 1370, 1372 (Fed. Cir. 2000); *Hazani v. U.S. Int’l Trade Comm’n*, 126 F.3d 1473, 1477 (Fed. Cir. 1997).

2. **U.S. Patent No. 6,457,099** (hereinafter “*Gilbert*”)

*Gilbert* does not teach or suggest the unitary portable storage device as claimed herein. *Gilbert* does not disclose, teach or suggest a unitary portable data storage device having a USB plug integrated into the unitary portable data storage device without an intervening cable capable of coupling the unitary portable data storage device directly to a USB socket on a computer.

In contrast, *Gilbert* teaches a programmable dedicated application card (PDAC) that executes dedicated software application(s) stored in the PDAC and sends the results to a user via a host computer to which the PDAC is connected. *See, e.g.*, col. 1, ll. 45-62. *Gilbert* teaches that using a dedicated RISC processor in the PDAC to run software improves execution speed. *Gilbert* also teaches that by running the software on the PDAC instead of on the host computer, resources of the host computer are freed up for other tasks, thereby improving the host’s performance. *See, e.g.*, col. 1, line 63 to col. 2, line 7. *Gilbert* states that a PDAC is its own stand-alone computer system, and the use of a PDAC functions as a hardware accelerator and enhances the capabilities of the host computer system. *See, e.g.*, col. 2, ll. 33-36; col. 3, ll. 21-26. *See Kim Affidavit* at ¶¶ 35 – 36.

Significantly, the PDAC in *Gilbert* does not teach or disclose a USB plug integrated into a unitary device or a storage device as claimed in the present application. *See Kim Affidavit* at ¶ 37. For at least the foregoing reasons, Applicants respectfully submit that claims 22 – 29 are patentable over *Gilbert*.

3. **U.S. Patent No. 6,786,412** (hereinafter “*Kondo*”)

Claim 25 stands rejected under 35 U.S.C. § 103 as being unpatentable over *Miller* in view of U.S. Patent No. 6,786,412 issued to Kondo (hereinafter “*Kondo*”). Claim 25 also stands rejected under 35 U.S.C. § 103 as being unpatentable over *Gilbert* in view of *Kondo*. Applicant respectfully disagrees with the Examiner’s reading of the disclosures in both *Miller*

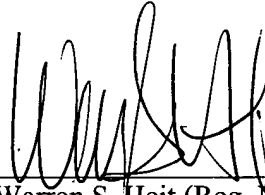
and *Gilbert* and submits that *Miller* and *Kondo*, as well as *Gilbert* and *Kondo*, alone or in combination, fail to teach or disclose various claimed limitations of claim 25.

Claim 25 depends from claim 22. For at least the same reasons discussed above, neither *Miller* nor *Gilbert* render unpatentable amended claim 25 of the present application. *Kondo* is cited for the sole proposition that it discloses an “erasure-preventative switch”. Col. 4, line 67. In particular, *Kondo* does not teach, suggest or otherwise disclose a unitary portable data storage device having an integrated USB plug that enables the storage device to directly plug into a USB port of a computer without an intervening cable. *See Kim Affidavit* at ¶ 38. As such, Applicant respectfully submits that claim 22 and all pending claims dependent therefrom, including claims 23-28, are patentable over *Miller*, *Gilbert* and *Kondo*, alone or in combination, for the same rationale discussed in detail above.

**D. Conclusion**

Applicants respectfully request, to the extent such amendment is not already entered, that the specification be amended to include the priority claim requested in its Request for Filing a Continuation or Division of an International Application. Applicants respectfully submit that claims 22-29 are fully supported by the specification as filed and are patentable over the cited art of record. As such, early notification of allowance of claims 22-29 is earnestly requested.

Respectfully submitted,



Dated: March 21, 2005

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